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DESCRIPTION

Multiple Cavity Crate

The said invention involves a multiple cavity crate for containers such as yoghurt cups or similar, in accordance with the characterizing clause of claim 1.

Such multiple cavity crates are used for the securing as well as for the transport of food containers such as yoghurt cups, cream cups etc. For this, loaded multiple cavity crates are stacked on palettes and transported shrink-wrapped or in another manner as well as stored in the establishment. These multiple cavity crates must therefore ensure a sufficient amount of stability both in its own structure as well as when stacked in order to prevent damage to the food containers during transport.

A blank of foldable material for a multiple cavity crate is known in DE 34 23 091 C2. For this, securing struts are punched-out, raised and their respective ends are stuck together during the folding out of the wall areas. The struts resulting from this possess only a very limited rigidity, which can result in damage to the food containers during the stacking of the individual crates and/or during transport. In addition, it is costly to arrange advertising prints on the inside of the crate.

A stackable crate is known from G 85 07 721.6, with which the strut located in the inner-area is constructed in a similar fashion by means of folding the external border areas inwards at an angle of approx. 90°, whereupon each individual strut is connected with the rest of the material. This design also has the disadvantage of very limited rigidity and of a costly commercial expansion of the external side of the folded crate. In addition, the material utilization ratio of the crates mentioned is not spectacular in comparison.

This said invention addresses the task of creating a novel multiple cavity crate generic in nature, which ensures a significantly improved level of rigidity featuring a greater ratio of

material utilization (reduction in material). In addition, the multiple cavity crate is to provide load-relief for the containers.

The said invention concerning the generic multiple cavity crate is created in that at least one stabilizing strut connecting the base with the upper-part is designated between at least two rows of at least partially delimited cavities. Hence, the stabilizing strut runs between two rows of cavities (with interruptions if necessary) through the multiple cavity crate, connecting the struts with one another. This consequently guarantees bend-resistant rigidity, torsion-resistant rigidity and rigidity parallel to the base plane, which is significantly greater than that of the multiple cavity crates known that provide stabilization solely in the border areas. In essence, the stabilizing strut can run between two rows of cavities. It can also be interrupted, in which case, the necessary stabilization is still ensured. The invention allows for material savings of up to 40% in comparison to the conventional blanks.

For practical purposes, the stabilizing strut is formed by folding two foldable panels together, which pass through the blank extending parallel to one of its sides.

The two foldable panels mentioned are then stuck together after being unfolded for practical purposes. The stabilizing strut in turn deals with a double-layer construction, which likewise connects the base and the upper-part.

For practical purposes, areas belonging together are staggered due to the folding of the foldable panels for the production of the stabilizing strut - in consideration of the condition of panels - whereupon these areas are positioned together first through the folding of the foldable panels, that is, through the creation of the stabilizing strut.

According to a design of the multiple cavity crate corresponding to this invention, the blank comprises three foldable panels, for which, two foldable panels located on the sides can be folded to a middle foldable panel. Here,

the foldable panels located on the sides are connected with the respective struts aligning them in such a way that space is generated between them and the base through the folding of the struts.

A stabilizing strut is advantageously designated between each row of cavities, through which an optimal rigidity can be achieved.

Insofar the stabilizing strut is, in accordance with the possible design of this invention, aligned with the blank such that it runs parallel to the row of cavities with the greatest number of cavities, an optimal ratio of material utilization results. The foldable panels are connected to one another via a fold-line, e.g. a line comprising perforations or a line with limited material strength.

Furthermore, support straps, in accordance with another design of the invention, can be designated in the area of the stabilizing strut. These are directed upwards, that is, only on top of neighboring crates located at the top of the stack and absorb as well as transfer the force to the struts. As a result, the total integrity of the stacked crates is improved and subsequent damage of the good to be transported is avoided.

Another design of this invention is characterized in that two stabilizing struts are designated adjacent to one another. As a result, the rigidity of the struts is further increased on the one hand and on the other, a set partition line can also be designated between the two stabilizing struts such that the struts can be twisted into smaller struts by means of a few manual manipulations.

For practical purposes, neighboring foldable panels for the respective stabilizing struts that feature such a partition line are not connected such that the strut can only be separated along the set partition line. Alternatively, the two neighboring foldable panels along the set partition line are to be connected via removable adhesives. When needed, they can be separated into individual components using the set partition line. Thus, the division of such struts into smaller struts can be carried out at any time during the use of the struts

with the invention-pursuant multiple cavity crate, for example, by the buyer, the retailer or - if desired - by the manufacturer prior to dispatch into the retail market.

Furthermore, folds are designated in the corner area for practical purposes. For these folds, two panels can be folded together and connected, preferably using an adhesive. An increase of the stability of the corners is consequently ensured.

The blank features a border area, which faces out when folded with its upside corresponding to the upside of the base. This allows for the commercial printing of the upper-part of the base and simultaneously of the side area, which is visible from the outside. As a result, the highly visible upper-portion of the blank can be labeled.

For practical purposes, the upper-portion of the flat blank is labeled, the upper-portion of the base, that is.

For practical purposes, a strap is strapped towards the top and the neighboring strap on the outside downwards on the side of the strut running perpendicular to the respective stabilizing strut. Then both straps are stuck together after the staggering achieved by erecting the crate has been fully completed. This also generates a special reinforcement of the crate.

A partial strut can be designated between at least two neighboring cavities in a row generating a special advantage. This strut extends over a partial area transverse to the row of cavities. As a result, the cavities are only partially delimited. This produces a particularly high twist-resistant rigidity since the base is not transversely interrupted. This has also the additional advantage that the uninterrupted base is available for commercial printing.

The partial strut can be connected to the base via a support strut for practical purpose such that the partial strut is provided with a stable footing. In addition, a multiplicity of partial and support struts results in an increase of the general stability of the multiple cavity box.

In essence, the support strut can run parallel to the stabilizing struts. As a result, the support strut essentially runs perpendicularly between the upper-part and the base, which in turn produces an increase in the torsion-resistant rigidity parallel to the base's plane. However, it is also possible that the support strut runs diagonal to the upper-part and the base.

Protrusions can be advantageously designated in the area of the upside particularly for the lateral-securing of a container. These protrusions can be especially designated in the area of the partial struts, thereby enabling the partial struts to fulfill a double-function, that is, the securing of a container on one hand as well as increasing the rigidity of the struts on the other. It is particularly practical, if the protrusions feature a deformed contour so that the containers inserted can be particularly well stabilized in their position.

A crate utilizing the previously described partial struts is characterized by its increased material savings of some 28% in comparison to conventional crates.

The partial as well as the support struts can be arranged such that they are positioned directly opposite one another within a row of cavities, particularly in a row located on the inside. This is advantageous in that the protrusions described above that are located in the area of the partial struts equally stabilize the inserted container in its position on both sides. The stability of the entire crate can be thereby increased.

In contrast, the partial as well as support struts can only be designated on the side of the border areas for rows of cavities located along the border.

Another advantageous layout of the crate exists in that at least one transverse stabilizing strut is designated transverse to the stabilizing struts. The transverse stabilizing strut is positioned essentially at a right angle to the stabilizing strut and similarly runs between two consecutive rows of cavities. This additionally increases the twist-resistant rigidity as well as the carrying capacity of the multiple cavity crate to an even greater extent.

The transverse stabilizing strut can be advantageously removed along a set partition line. As needed, the multiple cavity crate can be divided into smaller creates along the partition line with a few simple manipulations. The foldable panels next to the set partition line can, for example, only be connected in their lower-area via a line comprising a perforation. In addition or alternatively, the two foldable panels can be bonded together using a removable adhesive. Likewise, a separation of the transverse stabilizing strut can be conducted in the same manner as with the stabilizing struts described above.

The crate's areas positioned on both sides of the transverse stabilizing strut can be pivoted together such that the multiple cavity crates can be positioned on top of a roof-shaped holder or the like such that the two areas of the multiple cavity crate are positioned diagonal one another, each consequently pointing in a different direction. This can be advantageous to the presentation of the containers held by the multiple cavity crate.

Furthermore, support straps can be designated in the area of at least one part of the transverse stabilizing strut. These support bars, which are bent upwards when the multiple cavity crate is folded-up – like the support straps on the stabilizing struts that were already described above – ensure the bracing of the multiple cavity crate to the multiple cavity crate above. As a result, a sufficient distance is maintained between the crates positioned on top and the containers designated for the crate positioned below and the containers are not damaged by the weight of the crates positioned overhead.

In yet another advantageous design variation, a partial strut is designed in the area of the partially delimited cavities. This partial strut extends over a partial area transverse to a row of cavities. This is advantageous in that the containers inserted are protected in a particularly effective manner from shifting within the partially delimited cavities and/or the respective punch-out. Therefore, the partial struts have a reinforcing effect within the multiple cavity crate on the one hand and on the other, generate proficient gripping force of the containers within the openings.

The respective partial strut is advantageously connected to the base via a support strut. The support strut also leads to the improved gripping of the containers as well as an

increased stabilization and twist-resistant rigidity of the entire crate. Crates stacked on top also contribute to an even better gripping of the containers.

For practical purposes, the partial strut and/or the support strut can each be positioned in the middle of a partially delimited cavity. This is advantageous in that the inserted containers are equally stabilized in their position on both sides.

The support strut can advantageously run diagonally from the partial strut inwards to the base, providing even better gripping of the inserted containers and optimal protection from shifting.

Furthermore, the width of the support strut can increase in the direction of the base and be, e.g. trapezoid-shaped. This layout also ensures a particularly stable footing for the containers.

It is possible that the partial as well as support struts are positioned directly opposite one another in every second row of partially delimited cavities. For example, the partial and support struts are only positioned directly opposite one another in the rows located on the outside of a crate in order to make for a symmetrical layout of the crate and an even distribution of force particularly for containers inserted in the crate.

Another advantageous layout variation exists in that the stabilizing strut is interrupted in sections at least on one side. For this, the stabilizing strut only consists of partial struts and/or foldable panel sections, which is sufficient for the stabilization of the multiple cavity crate and serves to increase the rigidity. This layout variant is advantageous because less material is need and the multiple cavity crate becomes lighter.

The stabilizing strut can be completely interrupted in some sections or only on one side especially alternating with the bordering side such that, on the whole, a continuous stabilizing strut is nonetheless present.

The stabilizing strut can be advantageous interrupted by struts designated between the containers. The struts are therefore worked out of the stabilizing strut and as such, constitute a component of the upper-part.

For practical purpose, struts can also be designated in the border area, between which the containers can be positioned. In this case, the struts can be shaped at least in some sections like the struts designated at the stabilizing strut such that the containers inserted are stabilized both in the middle area as well as in the border area in the same manner. The border area can be additionally covered by means of a strap located on the side of the border, which is combined with the remaining areas between the struts and as such, extends between the base and the upper-part.

Every two neighboring struts can advantageously form an at least partially delimited cavity for holding a container. As a result, the containers experience direct support by the struts such that particularly effective grip is guaranteed.

The struts on the stabilizing strut facing both sides are staggered with respect to one another in this layout variant such that they remain firmly connected to the stabilizing strut. The asymmetry generated by the staggering of the struts results in an increase of the twist-resistant rigidity of the multiple cavity crate. For this, the struts can be only slightly or also completely staggered such that their sides bordering one another no longer overlap.

For practical purposes, the struts at the two neighboring stabilizing struts, particularly those parallel to one another and/or the struts positioned at the stabilizing strut and those positioned along the adjacent border area can be positioned directly opposite one another such that the free standing strut ends can be connected to one another, thereby mutually stabilizing one another.

The struts can, in particular, overlap at their free end areas such that they are combinable in a stable manner. For example, the struts can be bonded together at their free, overlapping end areas.

The struts opposite the stabilizing struts and/or those opposite a stabilizing strut and the opposing border area also cannot overlap one another, whereupon their free ends can each be connected with the base using a connecting strap.

For the purposes of clarity, recurrent features are provided with identical reference numerals only once. For practical purposes, layouts of the said invention are explained in more detail using the diagrams. They show::

Fig. 1 a top view (Fig. 1 A) of a blank for the production of a first layout for the invention-accordant multiple cavity crate as well as a local section representation (Fig 1 B) along the line A-A in Fig. 1 A;

Fig. 2 a top view (Fig. 2 A) of a second layout for the invention-accordant multiple cavity create prior to division (Fig. 2 A), a location section representation (Fig. 2 B) along the line B-B in Fig. 2 A as well as after division (Fig. 2 C);

Fig. 3 a third layout for the invention-accordant multiple cavity crate prior to division (Fig. 3 A) as well as after division (Fig. 3 B);

Fig. 4 a top view (Fig. 4 A) of a further layout for the invention-accordant multiple cavity crate as well as a localized view (Fig. 4 B) along the line C-C in Fig. 4 A;

Fig. 5 a top view of a blank for the production of a fifth layout for the invention-accordant multiple cavity crate;

Fig. 6 a top view of a blank for the production of a sixth layout of the invention-accordant multiple cavity crate;

Fig. 7 a top view of a blank for the production of a seventh layout of the invention-accordant multiple cavity crate;

Fig. 8a a top view of a blank for the production of an eighth layout of the invention-accordant multiple cavity crate;

Fig. 8b a sectional view of the multiple cavity crate in a folded state according to figure 8 along the line D - D;

Fig. 9 a top view of a blank for the production of another layout of the multiple cavity crate;

Fig. 10 a top view of a blank for the production of another layout of the multiple cavity crate;

Fig. 11a a top view of a blank for the production of another layout of the multiple cavity crate;

Fig. 11b a top view of the erected multiple cavity crate according to Fig. 11a as well as

Fig. 11 c a top view of the erected multiple cavity crate according to figures 11a and b with inserted containers.

Reference numeral 1 in Fig. 1 A denotes the flat blank for the production of a first layout of the invention-accordant crate. For practical purpose, this deals with material, which is provided with appropriate punch-outs and/or partial punch-outs. The thickly drawn, continuous lines rendered in figures 1 - 7 denote punch-outs, whereas thickly drawn lines interrupted by a continuous fine line depict partial punch-outs for the creation of foldable lines.

The packing material blank features a base 2, which can be seen in the top view of Fig. 1. This base 2 is covered with a full or partial area commercial print not shown in this case. Areas (in a flat state) are designated for base 2, which are designated as upper-part 3 and are positioned at a height different to that of base 2's plane following the folding-up of the blank for the production of the multiple cavity crate. This upper-part 3 comprises individual struts 4, whereupon every two neighboring struts 4 form a cavity for holding a container such as a yoghurt container.

In the respective border area 5 of the blank 1, crooked areas are similarly designated, which are positioned staggered to the corresponding inner struts 4 in the blank's flat state. The blank according to Fig. 1 features two stabilizing struts 7, which, as shown in the representation from Fig. 1, each cross

from one side to the other transversing the blank 1. Every stabilizing strut 7 is formed between the foldable panels 8 and 9, whereupon the foldable panel between the foldable panels 8 and 9 is drawn upwards when folding the multiple cavity crate together in according with Fig. 1 B such that the two foldable panels 8 and 9 come into an adjacent position. Another foldable panel 10, which connects the strut 4 with the foldable panel 9, is folded over such that, in according with Fig. 1 B, the foldable line is located between the foldable panel 10 and the strut 4, in this case at the same height as the foldable line between the foldable panels 8 and 9. A component of the stabilizing strut 7 is a somewhat foldable panel 20 roughly half as high locating at the beginning of the strut 4, which is folded against the foldable panel 8.

Furthermore, an affixed foldable panel 21 from the base 2 is folded against the border area 11 and bonded, if necessary.

When folding up the multiple cavity case according in the manner previously described, the crooked areas of each of the struts 4 located on the border's side and the crooked areas of the border area 5 achieve the correct position with the dissolution of the staggering and mutually form a cavity 6 for holding a (not shown) container. The areas of the base 2 are rendered dotted in Fig. 1 B, since they are not cut.

In addition, the limited side areas 11, which are located parallel to the reinforcing struts 7, are folded downwards by 90° such that the printed side is visible from the outside.

Furthermore, at least one part of the border straps (compare with border strap 17) is folded downwards and – following the dissipation of the staggering – adhered to the border strap 18 that is folded upwards. In addition, the corner strap 19 is folded around by approx. 90° and likewise bonded to the border strap 18.

In the area of each stiffening strut 7, a support strap created by a cut-out 13 is located, which is bent upwards when the crate is in a folded-up state. Said cut-out 13 ensures the support of the multiple cavity crate with the neighboring multiple cavity crate in the stacked network.

According to the second layout of the multiple cavity crate presented in Fig. 2 that corresponds to this invention, two stabilizing struts 7 are each designated to run transversely (comp. Fig. 2 A). For this layout, every stabilizing strut 7 consists of a foldable panel 8 as well as a foldable panel 9 whose connecting fold-line is, following the folding out of the stiffening strut and/or the struts into a plane, is located above the base 2 and/or above the respective strut 4. An identically arranged stabilizing strut 7 is alongside. Both stabilizing struts 7 are separated from one another by means of a set partition line, e.g. perforated line in Fig. 2 A. In this case as well, the stabilizing struts 7 run between the individual neighboring rows of cavities 6 for the cut-outs.

This layout makes it possible that individual rows of the multiple cavity crate can be separated when needed. For the layout according to Fig. 2 A, the corner straps 19 are bonded to the border straps 18 folded upwards. The border area 11 is likewise, in accordance with the representation in Fig. 2 B, folded downwards by roughly 90° during the folding out of the multiple cavity crate such that the commercial print is be seen easily from outside.

The strut 4 is – see Fig. 2 B - pushed upwards by folding the two-sided foldable panels 20. The foldable panels 20 additionally stabilize the stabilizing strut 7 as well as the border area 11. The areas of the base 2 are drawn with dotted lines in Fig. 2 B since they are not cut. Only the one half of the arrangement of the foldable panels, which form the stabilizing strut, is marked with reference numerals in Fig. 2 B for reasons of clarity.

A strap 16, which is connected with the base 2 and is folded inwards by 90°, is located in the area of the border strap 18.

Fig. 2 C shows a small, divided crate with only one row of punch-outs 6 after separation of this crate from the arrangement shown in Fig. 2 A. This layout also features corner protrusions 12 for the improvement of the stackability of the entire multiple cavity crate and/or of a divided multiple cavity crate.

The third layout of an invention-accordant multiple cavity crate represented in Fig. 3 similarly features stabilizing struts 7 located adjacent to one another. These struts are formed by means of the foldable panels 8 and 9 as well as the fold-line connected these two foldable panels, which is located on the upside of the Multiple cavity crate in an erected state. In addition, a set partition line, also in this layout, is located between the two stabilizing struts 7, which are setup as a double set partition line due to the outer cone of the struts (previously described). The corners are bonded on top of one another and with one another by means of the corner folds 15 of two triangle foldable panels, which additionally stabilizes this multiple cavity crate. Especially stable multiple cavity crates can be made in this way. Furthermore, the border straps 17 are folded down and the border straps 18 are folded up and bonded together as well in this case. The border area 11 and/or the commercial print located on top of it are easily visible from outside due to similar downward folding for the erected multiple cavity crate.

A divided multiple cavity crate smaller in size to the previously mentioned is also visible in Fig. 3 B. In additional, a double row of cavities is intended in this case in contrast to the previously described struts in accordance with the first and second layouts.

Fig. 4 A shows a fourth layout of the invention-accordant multiple cavity crate. Here, two stabilizing struts 7 (also compare with Fig. 4 B), each of which consists of foldable panels 8 and 9 folded on top of one another and which are separated by a set partition line 14, are likewise intended to be part of the design. This likewise deals with a multiple cavity create featuring double cavity arrangement on both sides of the stabilizing struts 7. The multiple cavity crate features struts 4, which must be bonded to one another after the crate is folded out in area 22. The mounts for the struts 4 are (compare with Fig. 4 B) are staggered with one another in the base. Increased protection from ripping is associated with this construct and the bonding. Likewise, corner folding 15 takes place by means of a corresponding folding up of the foldable panels located in the corner area as well as, if necessary, their adhesion. The bonding of the side areas, that is, border straps 17, 18 occurs in the manner described with the third layout.

For the blanks shown in Figures 5, 6 and 7, the coarsely hatched area (from above right to bottom left) represents the base 2, while the finely hatched area (from above left to bottom right) represents the upper-part 3 in a folded-up state. The perpendicularly arranged panels in the multiple cavity crate in its folded-up state feature no hatching. A partial strut 23 is designated between two partially delimited cavities 6 neighboring each other in a row in the two layout examples from Figures 5 and 6. This partial strut 23 extends over a partial area transverse to the row of cavities 6. The strut provided with the reference numeral 4 in the figures 1 and 2 is consequently no longer shown as a continuous strut, but rather only runs over a partial area in a transverse direction. As a result, the base 2 is no longer interrupted for the centering of the containers and a commercial print can be applied over a large area. Apart from that, the continuous base leads to an increased twist-resistant rigidity in the multiple cavity crate.

Some partial struts 23 are each connected with the base 2 via a support strut 24. The support struts 24 similarly increase the rigidity of the entire struts. For this, the support struts 24 essentially run parallel to the stabilizing struts 7. The support struts 24 can, however, absolutely also run diagonal to the stabilizing struts and consequently be arranged diagonal to the upper-part respectively to the base.

In the area of the upper-part 3, protrusions 25 are designated particularly for the side gripping of a container. These protrusions 25 feature a distorted contour for adjusting to the external contour of the inserted container. The protrusions 25 are also designed for both sides of the partial strut 23.

As can be gathered from figures 5 and 6, partial 23 as well as support struts 24, which are directly opposite one another, are designated in the row of partially delimited cavities located on the inside. In the rows of cavities 6 on the side of the border alongside, the partial 23 as well as support struts 24 are only designated for the side of the border areas. The partial as well as support struts suffice for generating a high level of rigidity for the struts.

The layout according to Fig. 6 will now be discussed. A transverse stabilizing strut 7' is designated transverse to the stabilizing struts 7. This

transverse stabilizing strut 7' leads to a further increase in the stability, twist-resistant rigidity as well as the carrying capacity of the crate.

For the blank depicted in Figure 8a, the coarsely hatched area represents the base 2, while the fine hatched area stands for the upper-part 3 in a folded-up state.

The transverse stabilizing strut 7' can be separated along a set partition line 26. The set partition line 26 is designed as perforation such that the two areas of the multiple cavity crate can be separated from one another easily. This facilitates above all the division of the crates into smaller units.

The transverse stabilizing strut 7' is formed through the folding together and bonding of each set of two transversely running border areas 11 arranged on both sides of the transverse stabilizing strut 7'. The transverse stabilizing strut 7' in particular is kept intact by a connection of the neighboring border regions 5 and/or border straps 17 and 18 as well as the corner straps 19 of the areas arranged on both sides of the transverse stabilizing strut 7'. The two areas on both sides of the transverse stabilizing strut 7' can also only be connected with one another such that they can be pivoted together. For this, the two areas along the transverse stabilizing strut 7' are only connected with one another in terms of lines.

In the area of the transverse stabilizing strut 7', support straps 27 are additionally designated. These straps ensure that the necessary space to the crate positioned overhead is maintained.

For the blank depicted in Figure 7, the partial struts 23 are designated in the area of the partially delimited cavities 6, whereupon the partial struts 23 extend over a partial area transversely to a row of cavities 6. In this case as well, the partial strut is connected to the base 2 via a support strut 24. The arrangement of the partial struts 23 as well as the support struts 24 in the area of the cavities 6 results in the inserted containers being effectively secured against shifting laterally. In addition, the partial struts 23 in connection with the support struts 24 also affect a stiffening of the multiple cavity crate.

The partial struts 23 as well as the support struts 24 are each positioned in the middle of a partially delimited cavity 6 in order to stabilize the inserted containers equally on both sides.

In the folded-up state, the support strut 24 runs inwards diagonally from the partial strut 23 to the base 2, thereby provided for even better gripping of the inserted containers on the one hand, while on the other hand these containers can still be easily removed from above.

The width of the support struts 24 increases in the direction of the base 2, whereupon the support struts located on the inside 24 exhibit the shape of an equilateral trapezoid. The widening of the support struts 24 in the direction of the base 2 generates a further improvement in the gripping of the containers.

As further gathered from Figure 7, the partial 23 as well as support struts 24 are positioned in each of the outward-facing rows of partially delimited cavities 6, while no support struts 24 are designed in the middle row in order not to weaken the stabilizing strut 7 through excessive interruptions in its stability and/or integrity.

The layout depicted in Figure 8a and b will now be described. For this multiple cavity crate, the stabilizing strut 7 is interrupted in sections. This design, in contrast to the example layout from Figure 1 A, enables the saving of even more material and the reduction of the crate's weight.

The stabilizing strut 7 is formed by means of several and/or two foldable panel sections 30 that are to be bonded together and is interrupted by the struts 4 designated for between the containers, which are located between the foldable panel sections 30. In addition, a particularly twist-resistant multiple cavity create is produced through the connection of the individual foldable panel sections 30 to the upper part 3 by means of the neighboring struts 4. Apart from that, a particularly compact design of the multiple cavity strut is consequently achieved.

Struts 4' are designated along the border area, between which the containers can be positioned. In contrast, the border strap 28 is designed without interruptions, thereby providing for a stable border area.

Every two neighboring struts 4 respectively 4' form at least one partially delimited cavity 6 for the reception of a container. The containers consequently rest against the edge of the cavities and are secured in this manner.

The struts 4 on the stabilizing strut 7 that point to both sides are staggered with respect to one another such that they are mounted on the stabilizing strut 7. The staggered arrangement of the struts 4 results furthermore in a high twist-resistant rigidity above all in the area of the stabilizing strut 7.

The struts 4 and 4' positioned opposite one another are located on the one hand at the stabilizing strut 7 and on the other at the adjacent border area such that their free end areas 29 can be connected with one another. For this, the struts 4 and 4' overlap at their free end areas 29 (see Fig. 8b) and are bonded together in the overlapping area.

In the Figures 9 to 11b, the base 2 is represented by a cross-hatched area, while the upper-part 3 is characterized by a hatched area. The areas that essentially run perpendicularly, the stabilizing strut 7, among others, are not hatched. The multiple cavity crate featured in Figures 9 and 10 is designed to hold twelve containers and/or cups, while the layout from Fig. 11 can be loaded with twenty cups 33. (see Fig. 11c).

For the layout of the multiple cavity crate featured in Fig. 10, stacking corners 34 are designed in contrast to Fig. 9. These stacking corners serve to improve the stackability of the multiple cavity crate.

For the layouts of the multiple cavity crate depicted in Figures 9 to 11, the struts 4 are staggered with respect to one another such that the stabilizing strut 7 is only interrupted on one side by the upwards-folded struts 4. The foldable panel sections 30

remaining between the struts 4 are bonded to one another at the stabilizing strut 7. This design ensures a significant savings of material as well as very good mechanical integrity and/or twist-resistant rigidity. The struts 4 opposite to one another at the stabilizing struts 7 as well as the struts 4, 4' positioned on one hand at the stabilizing strut 7 and on the other at the adjacent border area are not located directly opposite. The end areas 31 of these struts 4, 4' are therefore connected with the base 2 via a connecting strap 32.

In Fig. 9, a stabilizing strut 7 is designated, while two stabilizing struts 7 positioned parallel to one another are integrated in Fig. 10.

From a comparison of Figures 11a and 11b, the folding together and/or the erection of the multiple cavity crate from the blank 1 are particularly well depicted.

It is noted that all features of the previously described layouts can also be swapped among one another. The invention-accordant multiple cavity crate features a significantly improved rigidity on the one hand and on the other, an improved ratio of material utilization. In addition, the production costs (such as printing and punch-outs) can be reduced by up to 50% because more uses (e.g. thus far three uses, now six uses) are possible on the printed sheet. What's more, only limited punching ejection falls into the outer area. The invention-accordant blank is therefore particularly suited to rotational punching as well. The invention therefore represents a fully decisive advance in the applicable area.

List of Reference Numerals

1 Blank

2 Base

3 Upper-part

4 Strut

4' Strut

5 Border area

6 Cavity

7 Stabilizing strut

8 Foldable panel

9 Foldable panel

10 Foldable panel

11 Border area

12 Corner protrusion

13 Support strap

14 Set partition line

15 Corner fold

16 Strap

17 Corner strap

18 Border strap

19 Corner strap

20 Foldable panel

21 Foldable panel (base part)

22 Area of the adhesion

23 Partial strut

24 Support strut

25 Protrusion

26 Set partition line

27 Support strap

28 Border strap

29 End area

30 Foldable panel section

31 End area

32 Connecting strap

33 Cup

34 Stacking corner